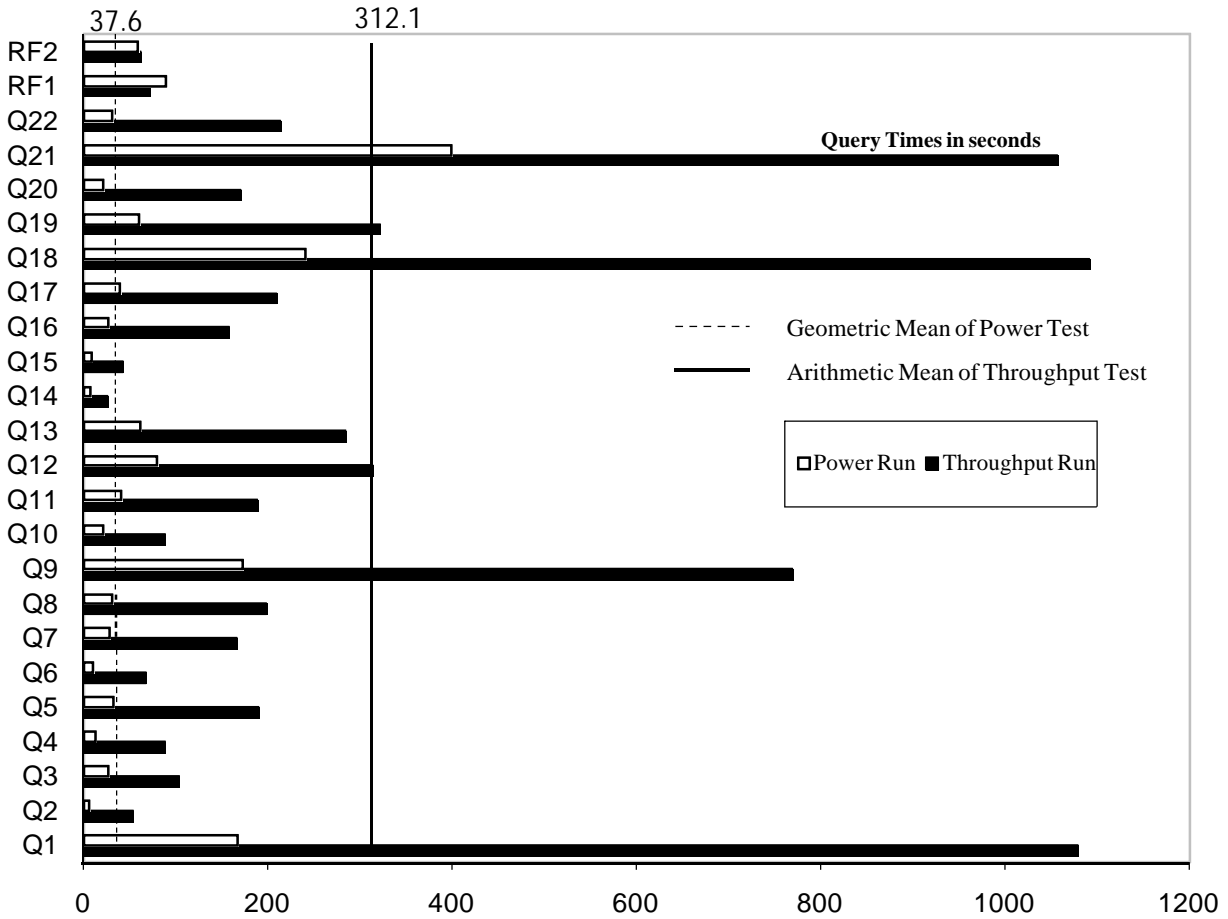
		HP ProLiant DL785 G6		TPC-H Rev. 2.8.0	
				Report Date: November 9, 2009 Revision Date: February 5, 2010	
Total System Cost		Composite Query per Hour Rating		Price Performance	
\$236,233 USD		81,514.8 QphH @ 1000G		\$2.90 USD \$ / QphH @1000G	
Database size	Database Manager	Operating System	Other Software	Availability Date	
1000GB	SQL Server 2008 Enterprise Edition	Windows Server 2008 R2 Enterprise Edition	None	November 9, 2009	



Database Load Time = 4h34m30s	Load included backup: Y	Total Data Storage / Database Size = 16.75
RAID(Base Tables): n.a.	RAID (Base Tables and Auxiliary Data Structure): n.a.	RAID(All)= Y

System Components	System Total	Per Node
Nodes:	1	n.a.
AMD Opteron™ 8439 Six-Core 2.8GHz:	8	8
Cores:	48	48
Threads:	48	48
Memory:	512GB	512GB
OS Disk Drives(internal):	6	6
Network Interfaces (on-board GigE):	2	2
Storage Controllers P800:	6	6
Storage Shelves MSA70:	12	n.a.
Storage Subsystem Disk Drives:	240	n.a.
Total Storage:	16,749.24 GB	n.a.



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Description	Price Key	Part Number	Unit Price	Qty.	Extended Price	3 Yr Maint Price	
Server Hardware							
HP DL785 CTO Chassis	1	AH233A	\$9,999	1	\$9,999		
HP O8439SE 2.8GHz DL785 4p FIO Kit	1	575261-L21	\$19,499	1	\$19,499		
HP O8439SE 2.8GHz DL785 4p Kit	1	575261-B21	\$19,499	1	\$19,499		
HP 64GB Reg PC2-5300 8x8GB	1	495605-B21	\$7,199	8	\$57,592		
HP 36GB 15k 2.5 Single Port HP SAS Drive	1	431933-B21	\$349	2	\$698		
HP 72GB 15k 2.5 Single Port HP SAS Drive	1	431935-B21	\$359	4	\$1,436		
HP 3year 4h 24x7 ProLiant DL785 HW Support	1	HA104A3 Opt.6XP	\$3,208	1		\$3,208	
HP 17" FlatPanel Monitor	1	GV537A8	\$130	1	\$130		
HP USB Keyboard	1	GM321AA#ABA	\$14	1	\$14		
HP Optical 4 Button USB Mouse	1	EW208AA#ABA	\$7	1	\$7		
					Subtotal	\$108,874	\$3,208
Storage							
HP 5642 Unassembled Rack	1	358254-B21	\$865	1	\$865		
HP Smart Array Controller P800	1	381513-B21	\$949	6	\$5,694		
Storage MSA70	1	418800-B21	\$3,199	12	\$38,388		
Storage MSA70 10% Spares	1	418800-B21	\$3,199	2	\$6,398		
HP ext Mini SAS 4m Cable	1	432238-B21	\$142	12	\$1,704		
HP 72GB 15k 2.5 Single Port HP SAS Drive	1	431935-B21	\$359	240	\$86,160		
HP 72GB 15k 2.5 Single Port HP SAS Drive 10% spares	1	431935-B21	\$359	24	\$8,616		
					Subtotal	\$147,825	\$0
Server Software							
Microsoft Windows Server 2008 R2 Enterprise Edition	2	LSA-00397	\$2,328	1	\$2,328		
Microsoft SQL Server 2008 Enterprise x64 Edition with 25 CALs	2	810-07578	\$8,318	1	\$8,318	\$245	
Microsoft SQL Server 2008 Client License	2	359-01912	\$156	45	\$7,020		
					Subtotal	\$17,666	\$245
Total Extended Price					\$274,365	\$3,453	
Total Discounts					\$41,072	\$513	
Price Key: 1 - HP , 2 - Microsoft, Audited by Lorna Livingtree of Performance Metrics, Inc					Grand Total	\$233,293	\$2,940
All discounts are based on US list prices and for similar quantities and configurations. A 16% discount was based on the overall specific components pricing from vendor 1 in this single quotation. Discounts for similarly sized configurations will be similar to those quoted here, but may vary based on the components in the configuration.					3 year cost of ownership USD:	\$236,233	
					QpH @ 1000GB:	81,514.8	
					\$ USD/QpH @ 1000GB	\$2.90	
Sales contact: HP Sales Development, 19111 Pruneridge Ave., Cupertino, CA 95014 (408) 447 2320 or HP direct: 800-203-6748							
Prices used in TPC benchmarks reflect the actual prices a customer would pay for a onetime purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmark specifications. If you find that the stated prices are not available according to these terms, please inform at pricing@tpc.org. Thank you.							



Numerical Quantities

Measurement Results

Database Scale Factor	1000GB
Total Data Storage / Database Size	16.75
Start of Database Load	10/27/09 9:46:24
End of Database Load	10/27/09 14:20:54
Database Load Time	4h 34m 30s
Query Streams for Throughput Test	7
TPC-H Power	95,789.1
TPC-H Throughput	69,367.6
TPC-H Composite Query-per-Hour (QphH@1000GB)	81,514.8
Total System Price over 3 Years	\$236,233
TPC-H Price/Performance Metric (USD / QphH@1000GB)	\$2.90 / QphH@1000GB

Measurement Interval

Measurement Interval in Throughput Test (Ts) = seconds 7992 seconds

Duration of Stream Execution

Power Stream	Seed	RF1 Start Time		Query Start Time		RF2 Start Time		Duration
		RF1 End Time		Query End Time		RF2 End Time		
	1027142054	10/27/09	18:46:12	10/27/09	18:50:52	10/27/09	19:16:11	0:30:58
		10/27/09	18:47:41	10/27/09	19:16:11	10/27/09	19:17:10	

Throughput Stream	Seed	Query Start Time		Duration	RF1 Start Time		RF2 Start Time	
		Query End Time			RF1 End Time		RF2 End Time	
1	1027142055	10/27/09	19:20:12	2:00:35	10/27/09	21:17:56	10/27/09	21:19:41
		10/27/09	21:12:30		10/27/09	21:19:41	10/27/09	21:20:47
2	1027142056	10/27/09	19:20:12	2:02:55	10/27/09	21:20:48	10/27/09	21:22:04
		10/27/09	21:17:55		10/27/09	21:22:03	10/27/09	21:23:08
3	1027142057	10/27/09	19:20:13	2:05:03	10/27/09	21:23:09	10/27/09	21:24:17
		10/27/09	21:10:54		10/27/09	21:24:16	10/27/09	21:25:15
4	1027142058	10/27/09	19:20:13	2:07:03	10/27/09	21:25:16	10/27/09	21:26:19
		10/27/09	21:13:38		10/27/09	21:26:19	10/27/09	21:27:16
5	1027142059	10/27/09	19:20:14	2:09:04	10/27/09	21:27:17	10/27/09	21:28:18
		10/27/09	21:16:27		10/27/09	21:28:17	10/27/09	21:29:17
6	1027142060	10/27/09	19:20:14	2:11:08	10/27/09	21:29:18	10/27/09	21:30:23
		10/27/09	21:16:40		10/27/09	21:30:22	10/27/09	21:31:22
7	1027142061	10/27/09	19:20:14	2:13:10	10/27/09	21:31:23	10/27/09	21:32:24
		10/27/09	21:14:28		10/27/09	21:32:23	10/27/09	21:33:24



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TPC-H Timing Intervals (in seconds):

Query	Stream 0	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5	Stream 6	Stream 7	Min Qi	Max Qi	Avg. Qi
Q1	166.9	1,051.4	1,056.3	1,039.0	1,059.9	1,071.4	1,088.8	1,184.7	1,039.0	1,088.8	909.5
Q2	5.3	36.2	118.5	29.6	30.5	30.0	58.8	70.5	29.6	118.5	43.4
Q3	26.4	108.7	121.5	107.0	98.3	109.5	101.6	78.5	98.3	121.5	92.4
Q4	12.8	65.8	73.0	98.4	69.6	83.4	118.4	105.3	65.8	118.4	72.7
Q5	32.0	407.0	156.0	127.6	155.9	155.8	157.7	163.8	127.6	407.0	165.7
Q6	9.4	57.2	71.9	82.9	60.9	64.8	58.1	69.3	57.2	82.9	56.5
Q7	28.5	158.4	240.3	130.4	112.0	159.8	192.0	164.4	112.0	240.3	141.8
Q8	31.5	158.5	160.1	194.4	167.9	216.6	153.8	328.5	153.8	216.6	150.2
Q9	172.7	767.0	941.1	905.2	895.5	545.6	677.2	645.3	545.6	941.1	675.9
Q10	21.1	64.2	80.6	99.3	106.6	82.2	95.1	84.4	64.2	106.6	75.4
Q11	40.9	183.7	163.6	184.5	199.8	200.0	178.3	201.1	163.6	200.0	158.6
Q12	79.0	335.0	252.8	400.2	241.1	419.0	410.3	128.8	241.1	419.0	294.1
Q13	61.1	256.6	248.2	252.0	273.1	299.7	409.9	248.9	248.2	409.9	248.5
Q14	6.7	27.4	31.4	29.0	31.0	18.1	19.3	23.1	18.1	31.4	22.3
Q15	8.0	41.3	37.3	37.3	43.1	46.5	44.8	45.4	37.3	46.5	35.8
Q16	26.1	175.7	210.1	148.8	170.1	132.3	121.3	145.2	121.3	210.1	136.9
Q17	39.5	180.6	139.0	176.3	255.1	206.2	81.3	419.2	81.3	255.1	148.4
Q18	240.1	956.0	1,194.0	764.0	1,136.6	1,136.1	1,485.3	963.1	764.0	1,485.3	953.1
Q19	59.7	324.1	341.3	296.5	250.0	444.0	204.2	388.4	204.2	444.0	265.7
Q20	20.9	147.4	152.7	133.4	134.5	275.6	148.0	199.9	133.4	275.6	141.7
Q21	399.5	1,126.4	770.3	1,228.3	1,100.4	1,124.9	1,023.8	1,016.9	770.3	1,228.3	910.6
Q22	31.3	108.7	502.8	177.2	213.3	152.0	158.4	178.9	108.7	502.8	187.5
UF1	88.6	104.9	74.9	67.6	62.6	60.1	63.7	59.7	60.1	104.9	61.9
UF2	59.2	65.9	64.0	58.4	56.6	59.7	59.7	60.9	56.6	65.9	52.0